Math 112
LQuiz 07

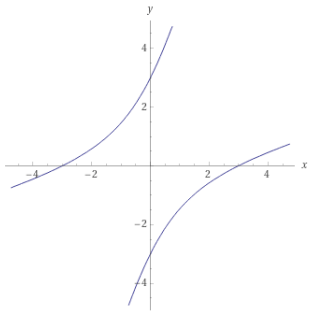
2022–02–01 (T)

Your name: _____

Exercise

(4 pt) Consider the hyperbola graphed below, which is given by the equation

$$x^2 + y^2 = 4xy + 9 \tag{1}$$



(a) (1 pt) From the graph, the point $(x, y) = (3, 0)$ appears to be on the hyperbola. Prove this, algebraically.

(b) (1 pt) From the graph, what can we predict about the slope of the tangent line to the graph at the point $(3, 0)$?

(c) (2 pt) Compute the rule of assignment for y'. (Your answer will involve both x and y.) Show that y' evaluated at the point $(x, y) = (3, 0)$ equals $\frac{1}{2}$.